NATIONAL WEATHER SERVICE INSTRUCTION 10-922
DECEMBER 8, 2004

Operations and Services
Hydrologic Services Program, NWSPD 10-9

WEATHER FORECAST OFFICE HYDROLOGIC PRODUCTS SPECIFICATION

NOTICE: This publication is available at: http://www.nws.noaa.gov/directives/

OPR: OS31 (T. Helble)   **Certified by:** OS3 (T. Graziano)
Type of Issuance: Emergency.

SUMMARY OF REVISIONS: This directive supersedes NWS Instruction 10-922, dated February 9, 2004. The following revisions are made to this instruction:

1) Provides for segmentation of flash flood statements.
2) Allows the first, third, and fourth bullets of flash flood warnings to be longer than six lines.
3) Adds latitude/longitude requirement to flash flood statements.
4) Reverts to use of the wording "flash flood watch" in the text of flood watches instead of "flood watch for flash flooding," when the threat involves potential for flash flooding.
5) Makes the content requirements for RRx product headers less restrictive.
6) Allows the HYD product to be issued less frequently than daily.
7) Removes requirement for HYx products to be encoded in SHEF.
8) Adds the HCM as a WFO product.
9) Assigns a number to each figure.

 Signed   12/06/04
Gregory A. Mandt   Date
Director, Office of Climate,
Water, and Weather Services

Weather Forecast Office Hydrologic Products Specification

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1.   <u>Introduction</u>. This directive describes hydrologic products issued by National Oceanic and Atmospheric Administration National Weather Service (NWS) weather forecast offices (WFO), guidelines associated with these products, detailed content descriptions as needed, and a generic format for each product type. Examples of products described in this directive are provided in NWS Instruction 10-923, *Weather Forecast Office Hydrologic Product Examples*.

All WFO hydrologic products issued through NWS-supported dissemination systems follow certain identification and dissemination standards. Some of these standards apply to items appearing at the beginning of a product - e.g., World Meteorological Organization (WMO) header, AWIPS identifier, universal geographic code (UGC), and mass news dissemination (MND) header block. Other standards apply to the general format and content of products. Specific instructions on the headers and content of products to be disseminated over various NWS-supported systems are contained in procedural directives under NWS Policy Directive 10-17, *Dissemination*.

Special note applying to several products described in this directive – wherever a generic product format example calls for the listing of counties, the term "county" is also intended to represent the terms "borough" and "parish," both of which are used in lieu of counties in some states.

2.   **Hydrologic Outlook (ESF).** Hydrologic outlooks provide information on hydrometeoro-logical conditions which could cause flooding beyond 36 hours, affect water supply, or impact droughts.

2.1   Mission Connection. Hydrologic outlooks help the NWS meet its mission by providing long lead time information on the potential for flooding or other notable hydrologic activity. This product gives customers and partners lead time to consider response options, execute mitigation activities, and plan reservoir operations, thus helping to protect life and property and enhance the national economy.

2.2   Issuance Guidelines.

2.2.1   Creation Software. Use the river product formatter (RiverPro) in the WFO hydrologic forecast system (WHFS), a text editor, or other applications as appropriate, depending on the product's target audience, the time horizon covered, and the source of observed and forecast data used in the product.

2.2.2   Issuance Criteria. This product will be issued if precipitation forecasts or snowmelt potential indicate the possibility of flooding beyond 36 hours. This product may also be used to provide other types of hydrologic information such as seasonal water supply and dry weather conditions. In cases where an ESF has been issued in relation to a potential flood event and flooding does not materialize, an ESF will be issued to indicate there is no longer a possibility of flooding.

2.2.3   Issuance Time. Hydrologic outlooks issued in relation to potential flood events are non-scheduled, event-driven products. Issue other hydrologic outlooks on schedules coordinated with regional headquarters and local customers and partners.

2.2.4   Valid Time. A hydrologic outlook will be valid until a time/date specified in the product or until it is cancelled or updated by another hydrologic outlook.

2.2.5   Product Expiration Time. The product expiration time (at the end of the UGC line, in Coordinated Universal Time, or UTC) varies with the time horizon being covered in the product. For hydrologic outlook products covering periods just beyond the flood watch time horizon (36 hours), the product expiration time may be on the order of a day. For hydrologic outlooks with long-term probabilistic information, the product expiration time may be 30 days or more.

2.3   Technical Description.

2.3.1   UGC Type. Use County or Zone codes depending on regional policies.

2.3.2   MND Product Type Line. Use: "HYDROLOGIC OUTLOOK."

2.3.3   Content. The hydrologic outlook product will include:

      a.   Headline defining the type of flooding or water supply issue being addressed (e.g., flash flooding, main stem river flooding, snow melt flooding, extended stream flow prediction),

      b.   Area covered,

c.   Timing of the event,

d.   Relevant factors (e.g., synoptic conditions, quantitative precipitation forecasts (QPF), or soil conditions), and

e.   A closing statement indicating when additional information will be provided.

2.3.4   Format. The generic format is shown below in Figure 1:

```
FGA₁A₂ii Kccc ddhhmm (BBB)                                    (WMO heading)
ESFxxx                                                       (AWIPS identifier)
st<C or Z>XXX-XXX>XXX-ddhhmm-                         (UGC Type: county or zone)

HYDROLOGIC OUTLOOK                                       (MND Product Type Line)
NATIONAL WEATHER SERVICE <WFO location>                       (Issuing Office)
Time am/pm time_zone mon dd yyyy                            (Issuance time/date)

...<Headline statement>...


<Product content - narrative information, forecast information, or
combination of both>

$$

<(optional) forecaster name/number>
```

Figure 1. Generic format for hydrologic outlook (ESF) product.

2.4   Updates, Amendments, and Corrections. Provide updates by issuing a new product. Amendments are not applicable to this product. Follow standard NWS practices for providing corrections.

3.   Flood Watch (FFA). Flood watches inform the public of hydrometeorological conditions which may cause flooding when the flooding is neither certain nor imminent. Flood watches may cover states, counties, rivers, portions of counties, portions of states, or portions of rivers (e.g., one or more forecast points).

3.1   Mission Connection. Flood watches help the NWS meet its mission by providing advance notice and up-to-date information on the possibility of flooding within 36 hours.   This allows customers and partners to begin monitoring hydrometeorological conditions more closely and elevate flood mitigation resources to a higher state of readiness, thus helping to protect life and property.

3.2   Issuance Guidelines.

3.2.1   Creation Software. Create flood watches using the Watch/Warning/Advisory (WWA) software or other applications as appropriate.

3.2.2   Issuance Criteria. This product will be issued if the following conditions occur during the 36-hour period leading up to the onset of a possible flood event:

a.   Meteorological, soil, and/or hydrologic conditions indicate flooding is possible but not certain; or

b.   The effective time of a pre-existing watch changes; or

c.   The geographical area covered by a pre-existing flood watch increases; or

d.   An update to a pre-existing flood watch is required; or

e.   A cancellation of a pre-existing flood watch is required; or

f.   The expiration of a pre-existing flood watch is to be announced (optional - if required by regional or local office policies); or

g.   A dam or levee may fail threatening lives or property, but the threat is not deemed to be imminent.

3.2.3   Issuance Time. Flood watches are non-scheduled, event-driven products.

3.2.4   Valid Time. A flood watch will be valid until the time when the potential for flooding should end, as indicated in the headline, or until the product is cancelled.

3.2.5   Product Expiration Time. The product expiration time (at the end of the UGC line, in UTC) is generally set to be 6 to 8 hours after product issuance, but may be upwards of 12 to 24 hours for longer-fused potential flood situations. This time should be set to indicate when the next update will be issued, or, when approaching the end of the watch period, match the product valid time contained in the headline. When announcing expiration or cancellation of a flood watch, the product expiration time is not more than 15 minutes after the watch expiration or cancellation time.

3.3   Technical Description.

3.3.1   UGC Type. Use Zone codes (Zone or County for Western Region).

3.3.2   MND Broadcast Instruction Line. Use: "URGENT - IMMEDIATE BROADCAST REQUESTED." Note: "BULLETIN" may be used in exceptional situations such as potential dam failures – see regional policies. NWS Instruction 10-1701 provides criteria for use of the terms "Urgent" and "Bulletin."

3.3.3   MND Product Type Line. Use: "FLOOD WATCH."

3.3.4   Content. Flood watch products will include the following:

a.   Headline with:

(1)   Name of originating NWS office (if first time issuance, extension, or expansion of a watch),

(2)   Indication of whether the watch is a first time issuance or an extension, expansion, continuation, or termination of an existing watch,

(3)   General description of the geographic area covered, and

(4)   Effective time (except for products which only expand the watch area or announce cancellation or expiration);

b.   List of the counties covered, separated by ellipses and subdivided by state name if more than one state is involved (omitted for cancellations and expirations);

c.   Description of the hydrometeorological basis for the flood watch, including items such as the potential impact of the flooding, relevant factors (e.g., synoptic conditions, soil conditions, or quantitative precipitation forecasts);

d.   Statement defining the meaning of a watch, including the sentence "A flood watch means that flooding is possible but not imminent in the watch area;" and

e.   Call-to-action statement.

An optional "overview headline" may be provided above the main headline (a) described above. These overview headlines briefly summarize of the possible type of flooding, area covered, and ending time for the watch. Some examples of optional overview headlines are:

a.   ...FLASH FLOODING POSSIBLE OVER SOUTHERN CALIFORNIA UNTIL WEDNESDAY MORNING...

b.   ...FLOODING POSSIBLE IN SOUTHWESTERN VIRGINIA AND NORTHWEST NORTH CAROLINA UNTIL TOMORROW MORNING...

3.3.5   Format. The generic format is shown below in Figure 2:

```
WGA₁A₂ii Kccc ddhhmm (BBB)
FFAxxx
stZXXX-XXX>XXX-ddhhmm-

URGENT - IMMEDIATE BROADCAST REQUESTED          (MND Broadcast Instruction Line)
FLOOD WATCH
NATIONAL WEATHER SERVICE <WFO location>
time am/pm time_zone mon dd yyyy

<(Optional) ...overview headline...>
```

```
...THE NATIONAL WEATHER SERVICE <(optional) IN <WFO location>> HAS ISSUED A
<FLOOD or FLASH FLOOD> WATCH <FOR or IN> <geographic area> EFFECTIVE UNTIL
<time am/pm time_zone> <day>. THE WATCH INCLUDES THE <(optional) geographic
specifier> FOLLOWING <(optional) directional term> <(optional) state name>
<COUNTIES or AREAS>...
```
- or -
```
...THE NATIONAL WEATHER SERVICE <(optional) IN <WFO location>> HAS EXTENDED
THE <FLOOD or FLASH FLOOD> WATCH <FOR or IN> <geographic area> UNTIL
<time am/pm time_zone> <day>. THE WATCH INCLUDES THE <(optional) geographic
specifier> FOLLOWING <(optional) directional term> <(optional) state name>
<COUNTIES or AREAS>...
```
- or -
```
...THE NATIONAL WEATHER SERVICE <(optional) IN <WFO location>> HAS EXPANDED
THE <FLOOD or FLASH FLOOD> WATCH TO INCLUDE <geographic area>. THE WATCH
INCLUDES THE <(optional) geographic specifier> FOLLOWING <(optional)
directional term> <(optional) state name> <COUNTIES or AREAS>...
```
- or -
```
...THE <FLOOD or FLASH FLOOD> WATCH <FOR or IN> <geographic area> REMAINS
IN EFFECT UNTIL <time am/pm time_zone> <day>. THE WATCH INCLUDES THE
<(optional) geographic specifier> FOLLOWING <(optional) directional term>
<(optional) state name> <COUNTIES or AREAS>...
```
- or -
```
...THE <FLOOD or FLASH FLOOD> WATCH <FOR or IN> <geographic area> HAS BEEN
<CANCELLED or ALLOWED TO EXPIRE>...
```
(Note: in this case, for full cancellation, skip county/zone listing and put hydromet basis next)

```
IN <optional directional term> <state>...
```
(needed if more than one state is covered)

```
<county/zone #1>...<county/zone #2>...<county/zone #3>...
<county/zone #4>...<county/zone #5>...<county #n>
```
- or -
```
IN <optional directional term> <state>...

<(optional) directional term> <county/zone #1>...
<(optional) directional term> <county/zone #2>...
     .
     .
<(optional) directional term> <county/zone #n-1>...
<(optional) directional term> <county/zone #n>
```
(Use single column when directional terms are used)

(Repeat for each additional state (as necessary) using one of the above two formats)

```
<hydrometeorological basis for the flood watch>

<statement defining meaning of a watch>

<call-to-action statement>

$$

<(optional) forecaster name/number>
```

Figure 2. Generic format for flood watch (FFA).

Note (1): some examples of optional geographic specifiers used in the headline paragraph are:

a.   "THE MOUNTAINS AND DESERTS OF THE"

b.   "THE HIGH DESERT PORTIONS OF THE"

Note (2): a flood watch may be expanded in area and extended in time in the same product by using the second and third headline paragraphs provided above either separately or in combined form.

3.4   Updates, Amendments, and Corrections. Provide updates to a flood watch by issuing another flood watch as dictated by the above issuance criteria. Amendments are not applicable to this product. Follow standard NWS practices for providing corrections.

4.   Flash Flood Warning (FFW). Flash flood warnings are issued when flooding is imminent. This product will be reserved for those short-term events which require immediate action to protect lives and property, such as dangerous small stream flooding or urban flooding and dam or levee failures. The geographic areas addressed by flash flood warnings may be counties, portions of counties, river/stream basins, or other definable areas (e.g., deserts, valleys). Flash flood warnings may include observations and forecast information for specific points. Flash flood warnings and tornado warnings will not be combined in the same product. Flash flood warnings should not be combined with severe thunderstorm warnings.

4.1   Mission Connection. Flash flood warnings help the NWS to meet its mission by providing advance notification of dangerous, short-fused flood events. This allows customers and partners to take immediate mitigation actions such as evacuation to higher ground, thus helping to protect life and property.

4.2   Issuance Guidelines.

4.2.1   Creation Software. Create flash flood warnings using the WarnGen application.

4.2.2   Issuance Criteria. A flash flood warning will be issued for a WFO's CWA when:

a.   Flash flooding is reported; and/or

b.   A dam or levee failure is imminent or occurring; and/or

c.   A sudden failure of a naturally-caused stream obstruction (including debris slide, avalanche, or ice jam) is imminent or occurring, and/or

d.   Precipitation capable of causing flash flooding is indicated by radar, rain gages, and/or satellite; and/or

e.   Local monitoring and prediction tools indicate flash flooding is likely; and/or

f.   A hydrologic model indicates flash flooding for locations on small streams, or

g.   A previously issued flash flood warning needs to be extended in time; or

h.   An area is already covered by an existing flash flood warning, but now a new area also needs to be covered by a flash flood warning. Regardless of whether the new area is separate from or adjacent to the already covered area, a new, separate flash flood warning is issued for the new area.

4.2.3   Issuance Time. Flash flood warnings are non-scheduled, event-driven products.

4.2.4   Valid Time. A flash flood warning will be valid until the time when flooding (requiring immediate actions to protect lives and property) is expected to end, as indicated in the headline, or until the product is cancelled. When determining the valid time or considering an appropriate time for warning cancellation, the ending time for the flooding should be the determining factor rather than the end of heavy precipitation.

4.2.5   Product Expiration Time. The product expiration time (at the end of the UGC line, in UTC) is the same as the warning valid time in the headline (local time).

4.3   Technical Description.

4.3.1   UGC Type. Use County codes (Zone for Alaska, Guam, and American Samoa).

4.3.2   MND Broadcast Instruction Line. Use: "BULLETIN - EAS ACTIVATION REQUESTED."

4.3.3   MND Product Type Line. Use: "FLASH FLOOD WARNING."

4.3.4   Content. Flash flood warnings use a bullet format and will include:

a.   UGC line and date/time stamp as shown in the figure below.

b.   The action lead-in phrase "THE NATIONAL WEATHER SERVICE IN <WFO location> HAS ISSUED A" (for new issuances) or THE NATIONAL WEATHER SERVICE IN <WFO location> HAS EXTENDED THE" (for products extending an earlier warning), followed by three to four bullets delimited by asterisks (*), with the following information (bullets may be more than six lines):

(1)   First bullet - FLASH FLOOD WARNING FOR, followed by a list of the counties covered with, if needed, appropriate geographic modifiers, e.g., <county> IN NORTH CENTRAL <state>, SOUTHWEST <county> IN <state>, SOUTHWEST <county> in SOUTHEASTERN <state>, or THE MOUNTAINS AND DESERTS OF SOUTHWEST <county> IN SOUTHERN <state>.

(2)   Second bullet - UNTIL, followed by the event ending time.

(3) Third bullet - AT, followed by a discussion of the warning basis and expected impacts.

(4) Fourth bullet (optional) - pathcast, i.e., discussion of the forecast path of the flood with specific locations to be affected (e.g., cities, streets, mile markers, and neighborhoods).

Basin- or point-specific information may be integrated into the bullets.

c. A call-to-action statement following the bullets. Call-to-action statements should focus on avoiding flood dangers and not include instructions on how to escape from vehicles caught in flood waters.

d. Latitude/longitude polygon coordinates defining the warning area.

If available, hydrologic observations and/or forecasts for specific locations may included after the latitude/longitude coordinates, separated from the above information by a double ampersand (&&).

4.3.5 <u>Format</u>. Use the generic format shown below in Figure 3:

```
WGA₁A₂ii cccc ddhhmm (BBB)
FFWxxx
stC001-005>015-ddhhmm-

BULLETIN - EAS ACTIVATION REQUESTED
FLASH FLOOD WARNING
NATIONAL WEATHER SERVICE <WFO location>
hhmm am/pm time_zone mon dd yyyy

THE NATIONAL WEATHER SERVICE IN <WFO location> HAS <ISSUED A or
EXTENDED THE>

* FLASH FLOOD WARNING FOR ¹          (# counties covered will match # counties in UGC line)
  <county #1, with appropriate geographic modifier>
  <county #2, with appropriate geographic modifier>
  .
  .
  <county #n, with appropriate geographic modifier>

* UNTIL hhmm am/pm time_zone                          (expiration time of warning)

* AT hhmm am/pm time_zone <warning basis statement and expected impacts> ¹

* <(optional) pathcast ¹ – forecast path of flood or sequence of locations
  to be affected>
```

```
<call-to-action statement>

LAT...LON  nnnn nnnn                    ◄ (mandatory list of latitude/longitude points outlining
                                          the forecaster-drawn polygon defining the warning area)
$$

<(optional) forecaster name/number>
_____
```
Note (1): the length of the first, third, and fourth bullets may be longer than six (6) lines to convey necessary warning area, warning basis, and pathcast information..

Figure 3. Generic format for flash flood warning (FFW).

4.4   Updates, Amendments, and Corrections. Updates and amendments are not applicable. WFOs will reissue flash flood warnings for significant grammatical, format, or dissemination code errors, or for counties either omitted or erroneously added to a warning. Corrected warnings will have the same time in the MND header as the original warning. WFOs will issue flash flood statements to inform customers of erroneous counties removed from original warnings (either in the FIPS/Zone UGC code or in the body of the warning).

5.   Flash Flood Statement (FFS). Flash flood statements provide supplemental information on active flash flood warning products, such as updated observations and impact information.

5.1   Mission Connection. Flash flood statements help the NWS to meet its mission by providing the information customers and partners need to direct mitigation activities towards continuing flash flood threats and/or receding flood situations where waters continue to present a danger to lives and property.

5.2   Issuance Guidelines.

5.2.1   Creation Software. Create flash flood statements using the WarnGen application.

5.2.2   Issuance Criteria. Flash flood statements will be issued for a WFO's CWA to:

    a.   Announce cancellation or expiration of a flash flood warning; and/or

    b.   Provide additional information to supplement a continuing flash flood warning.

5.2.3   Issuance Time. Flash flood statements are non-scheduled, event-driven products, issued when necessary according to the above issuance criteria.

5.2.4   Valid Time. A flash flood warning described in a flash flood statement will continue to be valid until it expires or is cancelled or updated by another flash flood statement.

5.2.5   Product Expiration Time. For flash flood statements providing supplemental information on (but not cancelling) a flash flood warning, the product expiration time (at the end of the UGC line) is the same as product expiration time for the referenced flash flood warning. For flash

flood statements announcing expiration or cancellation of a flash flood warning, the product expiration time is not more than 15 minutes after the warning expiration or cancellation time.

5.3   Technical Description.

5.3.1   UGC Type. Use County codes (Zone for Alaska, Guam, and American Samoa).

5.3.2   MND Broadcast Instruction Line. Not applicable to the flash flood statement.

5.3.3   MND Product Type Line. Use: "FLASH FLOOD STATEMENT."

5.3.4   Content. The flash flood statement product uses a non-bulleted format. It may be a single segment cancellation product, a single-segment continuation product, or a two-segment product which cancels a flash flood warning for part of the original area and continues it for the remaining area. If the flash flood statement is a two-segment product, the order of segments will be as follows:

        a.   Cancellations
        b.   Continuations

Note: the flash flood statement will not be used to announce expansions in area or extensions in time for a previously issued flash flood warning. All such situations will be covered by issuance of new flash flood warning products. For the situation when a multi-county flash flood warning needs to be cancelled for part of its original area and extended in time for the other part, issue one FFW product announcing the extension and issue a separate FFS product announcing the cancellation.

All segments in flash flood statements will include the following:

        a.   UGC line, county/city listing, and date/time stamp as shown in the figure below.

        b.   Headline with indication of whether the flash flood warning continues to be in effect or is being cancelled or allowed to expire, followed by the area covered by the flash flood warning;

        c.   Update on current/future hydrometeorological conditions and impacts;

        d.   Call-to-action statement. Call-to-action statements should focus on avoiding flood dangers and not include instructions on how to escape from vehicles caught in flood waters.

        e.   Latitude/longitude polygon coordinates defining the warning area.

If available, hydrologic observations and/or forecasts for specific locations may included after the latitude/longitude coordinates, separated from the above information by a double ampersand (&&).

5.3.5   <u>Format</u>. Use the generic format shown below in Figure 4:

```
WGA₁A₂ii cccc ddhhmm (BBB)
FFSxxx

FLASH FLOOD STATEMENT
NATIONAL WEATHER SERVICE <WFO location>
hhmm am/pm lst day mon dd yyyy
```

(Include one or more of the following segments in the indicated order:)

   For corrections:
```
stC001-005>015-ddhhmm-
<county #1>-<county #2>-<county #n>-
INCLUDING <THE CITIES OF> location...location
hhmm am/pm time_zone day mon dd yyyy

<Appropriate text for cancellation, expiration, or continuation of warning
(see formats below)>

$$
```
   or / and (for cancellations):
```
stC001-005>015-ddhhmm-
<county #1>-<county #2>-<county #n>-
INCLUDING <THE CITIES OF> location...location
hhmm am/pm time_zone day mon dd yyyy

...THE FLASH FLOOD WARNING HAS BEEN CANCELLED FOR <(optional) directional
term> <county #1> <(optional) geographic portion(s)>...<(optional)
directional term> <county #2> <(optional) geographic portion(s)> AND
<(optional) directional term> <county #n> <(optional) IN> <(optional)
geographic portion(s)> <(optional) geographic descriptor> <(optional)
directional term> <(optional) state>...

AT hhmm am/pm time_zone...<basis for warning cancellation>

<call-to-action statement>

LAT...LON  nnnn nnnn

$$
```
   or / and (for expirations):
```
stC001-005>015-ddhhmm-
<county #1>-<county #2>-<county #n>-
INCLUDING <THE CITIES OF> location...location
hhmm am/pm time_zone day mon dd yyyy

...THE FLASH FLOOD WARNING HAS EXPIRED FOR <(optional) directional term>
<county #1> <(optional) geographic portion(s)>...<(optional) directional
term> <county #2> <(optional) geographic portion(s)> AND <(optional)
directional term> <county #n> <(optional) IN> <(optional) geographic
portion(s)> <(optional) geographic descriptor> <(optional) directional
term> <(optional) state>...

AT hhmm am/pm time_zone...<basis for warning expiration

<call-to-action statement>

LAT...LON  nnnn nnnn

$$
```

or / and (for continuations):

```
stC001-005>015-ddhhmm-
<county #1>-<county #2>-<county #n>-
INCLUDING <THE CITIES OF> location...location
hhmm am/pm time_zone day mon dd yyyy

...THE FLASH FLOOD WARNING REMAINS IN EFFECT FOR <(optional) directional
term> <county #1> <(optional) geographic portion(s)>... <(optional)
directional term> <county #2> <(optional) geographic portion(s)> AND
<(optional) directional term> <county #n> <(optional) geographic
portion(s)>
<(optional) IN> <(optional) geographic descriptor> <(optional) directional
term> <(optional) state> UNTIL <hhmm am/pm time_zone> <day>...

AT hhmm am/pm time_zone...<updated warning statement and expected impacts>

<call-to-action statement>

LAT...LON  nnnn nnnn

$$

<Name/Initials/Forecaster ID> (optional)
```

Figure 5. Generic format for flash flood statement (FFS).

5.4   Updates, Amendments, and Corrections. Provide updates by issuing a new product. Amendments are not applicable to this product. Follow standard NWS practices for corrections.

6.   Flood Warning (FLW). Flood warnings are issued for any high flow, overflow, or inundation not covered by flash flood warning products. There are two general types of flood warnings - areal flood warnings and flood warnings issued for forecast points. Areal flood warnings are issued for areas along rivers and streams or for counties or portions of counties (with the areas covered described in the same way as for flash flood warnings). Flood warnings for forecast points usually include information on the impacts of expected flooding at locations upstream and/or downstream from covered forecast point(s).

6.1   Mission Connection. Flood warnings help the NWS to meet its mission by providing advance notification of flooding which is imminent or occurring. This product gives customers and partners time to initiate mitigation actions such as evacuation, removal of goods and belongings, alteration of reservoir releases, and activation of diversion works, thus helping to protect life and property.

6.2   Issuance Guidelines.

6.2.1   Creation Software. Generate site-specific flood warnings with RiverPro in the WHFS. Create areal warnings with the WWA software or RiverPro with appropriately configured templates and/or software. Use other applications as appropriate.

6.2.2   <u>Issuance Criteria</u>. Flood warnings will be issued when:

      a.   Flood monitoring and prediction tools and/or RFC guidance indicate flooding is likely,

      b.   Flooding is reported,

      c.   The effective time of a pre-existing warning changes (applies to areal flood warnings only),

      d.   The geographical area covered by a flood warning increases,

      e.   Forecast flooding increases to a higher category (e.g., minor to moderate) than what was provided in a previously issued flood warning product, or

      f.   Observed flooding increases to a higher category than what was forecast in a previously issued flood warning product. For definitions of flood categories, see NWS Manual 10-950, *Definitions and General Terminology*.

6.2.3   <u>Issuance Time</u>. Flood warnings are non-scheduled, event-driven products.

6.2.4   <u>Valid Time</u>. Flood warnings for forecast points will be valid until the warning for each forecast point in the product is either explicitly or implicitly cancelled in a flood statement (FLS). Areal flood warnings will be valid until the time when the flooding (requiring actions to protect lives and property) is expected to end, as indicated in the headline, or until the product is cancelled by a flood statement.

6.2.5   <u>Product Expiration Time</u>. For flood warnings for forecast points, the product expiration time (at the end of the UGC line) is generally set to be 12 to 24 hours after product issuance, but may be as low as 6 hours for more rapidly changing situations. For areal flood warnings, the product expiration time is generally set to be 6 to 24 hours after product issuance, depending on the hydrologic situation and characteristics of the area of concern, and is the same as the valid time in the headline.

6.3   <u>Technical Description</u>.

6.3.1   <u>UGC Type</u>. Use County codes (Zone for Alaska and Pacific Regions and Zone or County for Western Region).

6.3.2   <u>MND Broadcast Instruction Line</u>. Use either: "BULLETIN - EAS ACTIVATION REQUESTED" or "BULLETIN - IMMEDIATE BROADCAST REQUESTED" depending on the hydrologic situation, regional policies, and customer requirements.

6.3.3   <u>MND Product Type Line</u>. Use: "FLOOD WARNING."

6.3.4   <u>Content</u>. Flood warnings for forecast points should include the following:

a.   Headline with:

    (1)   Name of originating NWS office,

    (2)   (Optional) Geographic area covered, and

    (3)   Name(s) of affected rivers/streams;

b.   Sections for each forecast point with:

    (1)   (Optional) Description of category of current flooding, if flooding is already occurring and if flood category information is available for the point,

    (2)   Description of the category of expected flooding, if flood category information is available for the point,

    (3)   Current stage/flow and time of observation,

    (4)   Flood stage/flow at the forecast point,

    (5)   Time when the river/stream reached or will reach flood stage/flow,

    (6)   Forecast crest/peak flow, with time and day when that crest/peak flow is expected,

    (7)   (Optional) Time when the river will fall below flood stage/flow,

    (8)   (Optional) Description of the known impact(s) of flooding at given stages (or flows) within the expected range of forecast values;

c.   (Optional) Statement summarizing the hydrometeorological basis for the warning;

d.   Call-to-action statement; and

e.   (Optional) Observed and forecast data in tabular format.

Areal flood warnings should include the following:

a.   Headline with:

    (1)   Name of originating NWS office,

    (2)   Description of the type of warning,

    (3)   Description of the geographic area covered, including each county, and

(4)   Effective time for the warning;

c.   Statement summarizing the hydrometeorological basis for the warning; and

d.   Call-to-action statement.

6.3.5   Format. The recommended generic format for flood warnings for forecast points is shown below in Figure 6 (see note 1):

```
WGA₁A₂ii Kccc ddhhmm (BBB)
FLWxxx
st<C or Z>XXX-XXX->XXX-ddhhmm-

BULLETIN - EAS ACTIVATION (or IMMEDIATE BROADCAST) REQUESTED
FLOOD WARNING
NATIONAL WEATHER SERVICE <WFO location>
Time am/pm time_zone mon dd yyyy


...THE NATIONAL WEATHER SERVICE IN <WFO location> HAS ISSUED A FLOOD
WARNING FOR THE FOLLOWING RIVER(S) <(optional) IN geographic area>...
<river name #1>...<river name #2> AND <river name #n>...

<line introducing river name and the associated forecast point,
trailed by descriptions of the following items:>...
  <(optional) category of current flooding (if available), if occurring>
  <description of expected flood category (if available)>
  <current stage/flow and observation time>
  <flood stage/flow>
  <time when the river/stream reached/will reach flood stage/flow>
  <forecast crest/flow and associated time/day>
  <(optional) time when river will fall below flood stage/flow>
  <(optional) impact description(s) at given stage(s)/flow(s)>

         (Repeat the above for each additional forecast point (if any))

<(optional) hydrometeorological basis for warning>

<call-to-action statement>

&&         (If tabular forecast values are provided, indicate end of text with double ampersand)

<(optional) tabular observed/forecast values>

$$

<(optional) forecaster name/number>
```

Figure 6. Generic format for flood warnings for forecast points (FLW).

Note (1): The following variations from the above generic format may be used in flood warnings:

a.   Bullet format, to highlight individual pieces of information for each forecast point (e.g., description of expected flood category, current stage and observation time).

b.   Product segmentation, to group information for one or more forecast points into geographic regions. See NWS Instruction 10-1702, *Universal Geographic Code (UGC)*, for a description of product segmentation.

c.   Other variations on the generic format not covered by (a) or (b), to provide the required and optional information for each forecast point in accordance with local user requirements.

Note (2): "Stage/flow" and "crest/flow" mean stage and/or discharge values may be used.

The generic format for areal flood warnings is shown below in Figure 7:

```
WGA₁A₂ii Kccc ddhhmm (BBB)
FLWxxx
st<C or Z>XXX-XXX->XXX-ddhhmm-

BULLETIN - EAS ACTIVATION (or IMMEDIATE BROADCAST) REQUESTED
FLOOD WARNING
NATIONAL WEATHER SERVICE <WFO location>
Time am/pm time_zone mon dd yyyy

...THE NATIONAL WEATHER SERVICE IN <WFO location> HAS ISSUED A FLOOD
WARNING <(optional) URBAN AREAS AND SMALL STREAMS IN or SMALL STREAMS IN>
FOR <geographic area> EFFECTIVE UNTIL <time am/pm time_zone> <day>...
      - or -
...THE NATIONAL WEATHER SERVICE IN <WFO location> HAS EXTENDED THE FLOOD
WARNING FOR <(optional) URBAN AREAS AND SMALL STREAMS IN or SMALL
STREAMS IN> <geographic area> UNTIL <time am/pm time_zone> <day>...
      - or -
...THE NATIONAL WEATHER SERVICE IN <WFO location> HAS EXPANDED THE FLOOD
WARNING TO INCLUDE <(optional) URBAN AREAS AND SMALL STREAMS IN or SMALL
STREAMS IN> <geographic area>...

<(Optional) list of counties>

<hydrometeorological basis for warning>          (one or more paragraphs)

<call-to-action statement>

$$

<(optional) forecaster name/number>
```

Figure 7. Generic format for areal flood warning (FLW).

Note (1): <geographic area> may be any type of area – one or more county names, a county name with a directional modifier (e.g., southern Cass County), a well-known geographic region (e.g., northern and central Maryland), or a description of a river reach (e.g., the Pend Oreille River in Pend Oreille County in northeast Washington).

Note (2): a flood warning may be expanded in area and extended in time in the same product by integrating the wording of the second and third headline paragraphs provided above.

6.4   Updates, Amendments, and Corrections. Provide updates to a flood warning by issuing a subsequent flood warning or flood statement as dictated by issuance criteria for those products. Amendments are not applicable to this product. Follow standard NWS practices for providing corrections.

7.   Flood Statement - Follow-up to Flood Warning (FLS). Flood statements issued to follow up flood warnings contain supplemental information on previously issued flood warnings, such as updated observations and impact information.

7.1   Mission Connection. This type of flood statement helps the NWS to meet its mission by updating information on threatening situations covered in previous flood warnings, thus helping to protect life and property.

7.2   Issuance Guidelines.

7.2.1   Creation Software. Create flood statements for forecast points with RiverPro in the WHFS. Create areal flood statements with the WWA software or RiverPro with appropriately configured templates and/or software. Use other applications as appropriate.

7.2.2   Issuance Criteria. This type of flood statement will be issued to:

    a.   Announce cancellation or expiration of a flood warning, or

    b.   Provide additional information to supplement flood warnings.

7.2.3   Issuance Time. Flood statements are non-scheduled, event-driven products.

7.2.4   Valid Time. A flood warning for forecast points described in a flood statement will continue to be valid until the warning is explicitly or implicitly cancelled within the current flood statement or a future flood statement.

An areal flood warning described in a flood statement will continue to be valid until the time when flooding is expected to end, as indicated in the headline, or until the product is cancelled by another flood statement.

7.2.5   Product Expiration Time. For flood statements providing supplemental information on flood warnings for forecast points, the product expiration time (at the end of the UGC line) is generally set to be 12 to 24 hours after product issuance, but may be as low as 6 hours for more rapidly changing situations.

For flood statements providing supplemental information on (but not cancelling) an areal flood warning, the product expiration time is the same as product expiration time for the referenced areal flood warning. For flood statements announcing expiration or cancellation of an areal flood warning, the product expiration time is not more than 15 minutes after the warning expiration or cancellation time.

7.3   Technical Description.

7.3.1   UGC Type. Use County codes (Zone for Alaska and Pacific Regions and Zone or County for Western Region).

7.3.2   MND Broadcast Instruction Line. Not applicable to the flood statement.

7.3.3   MND Product Type Line. Use: "FLOOD STATEMENT."

7.3.4   Content. Flood statements issued to provide updated information or announce cancellation or expiration of a flood warning for forecast points should include the following:

    a.   Headline with:

        (1)   List of all rivers/streams and corresponding forecast points affected by the warning and

        (2)   Indication of whether the flood warning continues or is being cancelled or allowed to expire,

    b.   Updated observations, forecasts, and impact information for each forecast point;

    c.   (Optional) Updated hydrometeorological basis describing current/future conditions;

    d.   (Optional) Call-to-action statement; and

    e.   (Optional) Tabular observation and forecast data.

Flood statements issued to provide updated information or announce cancellation or expiration of an areal flood warning should include the following:

    a.   Headline with:

        (1)   Description of the area covered by the flood warning and

        (2)   Indication of whether the flood warning continues or is being cancelled or allowed to expire;

    b.   Update on current/future hydrometeorological conditions; and

    c.   Call-to-action statement.

7.3.5   Format. The generic format for flood statements issued to follow-up flood warnings for forecast points is shown below in Figure 8:

```
WGA₁A₂ii Kccc ddhhmm (BBB)
FLSxxx
st<C or Z>XXX-XXX->XXX-ddhhmm-

FLOOD STATEMENT
NATIONAL WEATHER SERVICE <WFO location>
Time am/pm time_zone mon dd yyyy


...THE FLOOD WARNING FOR <forecast point #1>...<forecast point #2>
AND <forecast point #n> ON THE <river #1>...<river #2> AND <river #n>
<include as many other forecast point/river name combinations as
necessary> <REMAINS IN EFFECT or HAS BEEN CANCELLED or HAS BEEN
ALLOWED TO EXPIRE>...

<line introducing river and the associated forecast point, trailed
by descriptions of the following items:>
  <(optional) category of current flooding if already occurring>
  <current stage/flow and observation time>
  <flood stage/flow>
  <time when the river/stream reached/will reach flood stage/flow>
  <(optional) forecast crest/flow and associated time/day>
  <(optional) time when river fell/will fall below flood stage/flow>
  <(optional) impact description(s) at a given stage(s)/flow(s)>
```

(Repeat the above for each additional forecast point (if any))

```
<(optional) updated hydrometeorological basis>

<(optional) call-to-action statement>
```

&&   *(If tabular forecast values are provided, indicate end of text with double ampersand)*

```
<(optional) tabular forecast values>

$$

<(optional) forecaster name/number>
```

Figure 8. Generic format for flood statements issued to follow-up flood warnings for forecast points (FLS).

Note (1): The same variations from the above generic format are allowed for flood statements which are described in the footnote to the generic format for flood warnings (section 6.3.5).

Note (2): The terms "stage/flow" and "crest/flow" mean that stage and/or discharge values may be used in these locations.

The generic format for flood statements issued to follow-up areal flood warnings is shown below in Figure 9:

```
WGA₁A₂ii Kccc ddhhmm (BBB)
FLSxxx
st<C or Z>XXX-XXX->XXX-ddhhmm-

FLOOD STATEMENT
NATIONAL WEATHER SERVICE <WFO location>
Time am/pm time_zone mon dd yyyy


...THE FLOOD WARNING FOR <(optional) URBAN AREAS AND SMALL STREAMS IN or
SMALL STREAMS IN> <geographic area> HAS BEEN <CANCELLED or ALLOWED TO
EXPIRE>...
      - or -
...THE FLOOD WARNING FOR <geographic area> REMAINS IN EFFECT UNTIL
<time am/pm time_zone> <day>...

<(Optional) list of counties>


<hydrometeorological basis>

<(optional) call-to-action statement>

$$

<(optional) forecaster name/number>
```

Figure 9. Generic format for flood statements issued to follow-up areal flood warnings (FLS).

7.4   Updates, Amendments, and Corrections. Provide updates by issuing a new product. Amendments are not applicable to this product. Follow standard NWS practices for providing corrections.

8.   Flood Statement - Miscellaneous Advisories (FLS). Flood statements issued to provide miscellaneous advisories contain information on elevated river/stream flows or ponding of water in urban or other areas, when such events warrant notification of the public in a product less urgent than a warning.

8.1   Mission Connection. Flood statements issued to provide miscellaneous advisories help the NWS to meet its mission by making information available on unusual hydrologic activity, thus helping to protect life and property.

8.2   Issuance Guidelines.

8.2.1   Creation Software. Create these products with the WWA software or RiverPro with appropriately configured templates and/or software. Use other applications as appropriate.

8.2.2   Issuance Criteria. Issue when elevated stream flow or ponding of water occurs which warrants notification of the public.

8.2.3   Issuance Time. Flood statements are non-scheduled, event-driven products.

8.2.4   Valid Time. Flood statements providing miscellaneous types of advisories will be valid until the time when the hydrologic conditions of concern are expected to end, as indicated in the headline, or until the product is cancelled or updated by another flood statement.

8.2.5   Product Expiration Time. The product expiration time (at the end of the UGC line) is the same as the valid time in the headline and is generally set to be 6 to 24 hours after product issuance, depending on the hydrologic situation and characteristics of the area of concern.

8.3   Technical Description.

8.3.1   UGC Type. Use County codes (Zone for Alaska and Pacific Regions and Zone or County for Western Region).

8.3.2   MND Broadcast Instruction Line. Not applicable to the flood statement.

8.3.3   MND Product Type Line. Use: "FLOOD STATEMENT."

8.3.4   Content. Flood statements announcing the issuance, extension, expansion, continuation, cancellation, and/or expiration of any type of flood advisory should include the following:

      a.   Headline with:

            (1)   Name of originating NWS office (may be omitted when announcing continuation, cancellation, or expiration),

            (2)   Type of advisory - e.g., Urban and Small Stream Flood Advisory, Flood Advisory, Small Stream Flood Advisory, Minor Flood Advisory, etc.,

            (3)   Effective time (if applicable), and

            (4)   Covered geographic area;

      b.   Statement summarizing (for new product) or updating (for follow-up product) the hydrometeorological basis for the advisory; and

      c.   Call-to-action statement.

Flood statements issued for elevated river/stream conditions should include the following:

      a.   Headline describing the current hydrologic condition(s) of interest;

      b.   Description of hydrometeorological conditions; and

      c.   Call-to-action statement.

8.3.5   Format.

The generic format for flood statements providing miscellaneous advisories is shown below in Figure 10:

```
WGA₁A₂ii Kccc ddhhmm (BBB)
FLSxxx)
st<C or Z>XXX-XXX->XXX-ddhhmm-

FLOOD STATEMENT
NATIONAL WEATHER SERVICE <WFO location>
Time am/pm time_zone mon dd yyyy

...THE NATIONAL WEATHER SERVICE IN <WFO location> HAS ISSUED <A or AN>
<type of advisory> FOR <geographic area> EFFECTIVE UNTIL <time am/pm
time_zone> <day>...

      - or -
...THE NATIONAL WEATHER SERVICE IN <WFO location> HAS EXTENDED THE
<type of advisory> FOR <geographic area> EFFECTIVE UNTIL <time am/pm
time_zone> <day>...

      - or -
...THE NATIONAL WEATHER SERVICE IN <WFO location> HAS EXPANDED THE
<type of advisory> TO INCLUDE <geographic area>...

      - or -
...THE <type of advisory> THAT WAS IN EFFECT FOR <geographic area> HAS
BEEN <CANCELLED> or <ALLOWED TO EXPIRE>...

      - or -
...<Headline describing elevated streamflow or ponding of water>...

<hydrometeorological basis>

<(optional) call-to-action statement>

$$

<(optional) forecaster name/number>
```

Figure 10. Generic format for flood statements providing miscellaneous advisories (FLS).

Note (1): Several **types of advisory** products are issued under the FLS identifier. These include, but are not limited to, the Urban and Small Stream Flood Advisory, Flood Advisory, Small Stream Flood Advisory, and Minor Flood Advisory.

Note (2): an advisory product may be expanded in area and extended in time in the same product by integrating the wording of the applicable headline paragraphs provided above.

8.4   Updates, Amendments, and Corrections. Provide updates by issuing a new product. Amendments are not applicable to this product. Follow standard NWS practices for providing corrections.

9. **Hydrologic Statement (RVS).** The hydrologic statement provides hydrologic forecasts and related information in a format which meets customer and partner needs.

9.1   Mission Connection. The hydrologic statement helps the NWS meet its mission by providing hydrologic information in a format which can be easily read by customers and partners who do not have sophisticated decoding capabilities.

9.2   Issuance Guidelines.

9.2.1   Creation Software. Use RiverPro or other applications as appropriate.

9.2.2   Issuance Criteria.   Issue this product when river forecasts have been prepared for the hydrologic service area, or to disseminate information that warrants issuance to notify of significant hydrologic conditions (e.g., hydrologic observations show rapid rise but flow not expected to reach flood stage).

9.2.3   Issuance Time. Issue on schedules coordinated with customers and partners.

9.2.4   Valid Time. This product will be valid from the time of release until the next update unless otherwise specified.

9.3   Technical Description.

9.3.1   UGC Type. County codes should be used (Zone for Alaska).

9.3.2   MND Broadcast Instruction Line. Not applicable to the hydrologic statement.

9.3.3   MND Product Type Line. Use: "HYDROLOGIC STATEMENT."

9.3.4   Content. The hydrologic statement uses a non-segmented, non-bulleted format. Hydrologic statements typically include a headline identifying the area affected and narrative information and/or observations/forecasts of river stages, lake levels, and ice conditions.

9.3.5   Format. The generic format for hydrologic statements is shown in Figure 11 below:

```
FGA₁A₂ii cccc ddhhmm (BBB)
RVSxxx
stC001-005>015-ddhhmm-

HYDROLOGIC STATEMENT
NATIONAL WEATHER SERVICE <WFO location>
hhmm am/pm time_zone mon dd yyyy
```

```
(optional) ...<Headline statement>...

(optional) <Narrative information>

&& (optional - if narrative info needs to be separated from tabular info)

(optional) <tabular observed and/or forecast information>

$$

<(optional) forecaster name/number>
```

Figure 11. Generic format for a Hydrologic Statement (RVS).

9.4   Updates, Amendments, and Corrections. Provide updates by issuing a new product. Amendments are not applicable to this product. Follow standard NWS practices for corrections.

10.   Hydrologic Summary (RVA). The hydrologic summary provides hydrologic observations and related information in a format which meets the needs of customers and partners. This product may be used to disseminate information not included in the Hydrologic Statement or River and Lake Forecast Product.

10.1   Mission Connection. The hydrologic summary helps the NWS meet its mission by providing hydrologic information which can be used by customers and partners to assess antecedent conditions or the current status of rivers and reservoirs.

10.2   Issuance Guidelines.

10.2.1 Creation Software. Use RiverPro or other applications as appropriate.

10.2.2 Issuance Criteria. Issue hydrologic statements after data on rivers and reservoirs in the hydrologic service area have been collected and quality controlled.

10.2.3 Issuance Time. Issue on schedules coordinated with local customers and partners.

10.2.4 Valid Time. This product will be valid from the time of release until the next update unless otherwise specified.

10.3   Technical Description.

10.3.1 UGC Type. County codes should be used (Zone for Alaska).

10.3.2 MND Broadcast Instruction Line. Not applicable to the hydrologic summary.

10.3.3 MND Product Type Line. Use: "HYDROLOGIC SUMMARY."

10.3.4 Content. The hydrologic summary uses a non-segmented, non-bulleted format. Hydrologic summaries contain an optional headline and provide information such as observations of river stages, lake levels, precipitation data, or ice conditions.

10.3.5 <u>Format</u>. The generic format for hydrologic summaries is shown in Figure 12 below:

```
SRA₁A₂ii cccc ddhhmm (BBB)
RVAxxx
stC001-005>015-ddhhmm-

HYDROLOGIC SUMMARY
NATIONAL WEATHER SERVICE <WFO location>
hhmm am/pm time_zone mon dd yyyy

<(optional) ...headline...>

<Tabular data>

$$

<(optional) forecaster name/number>
```

Figure 12. Generic format for Hydrologic Summaries (RVA).

10.4 <u>Updates, Amendments, and Corrections</u>. Provide updates by issuing a new product. Amendments are not applicable to this product. Follow standard NWS practices for corrections.

11.   River and Lake Forecast Product (RVD). The river and lake forecast product provides hydrologic forecasts and observations in Standard Hydrometeorological Exchange Format (SHEF).

11.1 <u>Mission Connection</u>. The river and lake forecast product helps the NWS meet its mission by providing hydrologic forecasts and observations in a standardized format which allows ingest into a variety of computer applications operated by customers and partners.

11.2 <u>Issuance Guidelines</u>.

11.2.1 <u>Creation Software</u>. Generate the river and lake forecast product using RiverPro in the WHFS or other applications as appropriate.

11.2.2 <u>Issuance Criteria</u>. This product will be issued daily for daily forecast points. More frequent updates may be provided if needed.

11.2.3 <u>Issuance Time</u>. This product will be issued routinely on a schedule which meets partner and customer needs. The product can be issued as frequently as once per day, with updates as needed, or as infrequently as once per week.

11.2.4 <u>Valid Time</u>. This product will be valid from the time of release until updated.

11.3 <u>Technical Description</u>.

11.3.1 <u>UGC Type</u>. County codes should be used (Zone for Alaska).

11.3.2 <u>MND Broadcast Instruction Line</u>. Not applicable to the river and lake forecast product.

11.3.3 <u>MND Product Type Line</u>. Use: "DAILY RIVER AND LAKE SUMMARY."

11.3.4 <u>Content</u>. River and lake forecast products will include a table containing observed and forecast data in SHEF ".b " format, vertically aligned to maximize readability. Headers defining the field in each column will be provided in the following order:

      a.   NWS Location Identifier;

      b.   Station name;

      c.   Flood stage (if applicable);

      d.   Current stage or lake elevation;

      e.   24 hour change;

      f.   1 day forecast; and

      g.   Additional data, such as 6 hourly or daily forecast information out to 7 days (optional).

Rows of data should be grouped by river basin, with the name of the river basin provided above each grouping. When multiple forecast points exist on the same river, the river name should only provided once. An optional narrative may be included in the product.

11.3.5 <u>Format</u>. The generic format is shown in Figure 13 below:

```
FGA₁A₂ii cccc ddhhmm (BBB)
RVDxxx
stC001-005>015-ddhhmm-

DAILY RIVER AND LAKE SUMMARY
NATIONAL WEATHER SERVICE <WFO location>
hhmm am/pm time_zone mon dd yyyy

<SHEF-encoded hydrologic forecasts>

$$

<(optional) forecaster name/number>
```
Figure 13. Generic format for Daily River and Lake Summaries (RVD).

11.4 <u>Updates, Amendments, and Corrections</u>. Provide updates by issuing a new product. Amendments are not applicable to this product. Follow standard NWS practices for corrections.

12. **Hydrometeorological Data Products (RRx).** These products contain precipitation and other hydrometeorological data from various networks, including the NWS Cooperative Network, flood warning systems, ASOS, and networks operated by partnering agencies.

12.1   Mission Connection. These products help the NWS meet its mission by contributing hydrometeorological observations to a national information database which can be used by other government agencies, the private sector, and the public to enhance the national economy.

12.2   Issuance Guidelines.

12.2.1 Creation Software. Create hydrometeorological data products using the WHFS or other applications as appropriate.

12.2.2 Issuance Criteria. Issue this product to disseminate hydrometeorological data.

12.2.3 Issuance Time. Issue hydrometeorological data products according to schedules developed with local customers and partners.

12.2.4 Valid Time. Not applicable - this product is a report of observed data.

12.3   Technical Description.

12.3.1 UGC Type. County codes should be used.

12.3.2 MND Broadcast Instruction Line. Not applicable.

12.3.3 MND Product Type Line. Use the MND product type lines shown in table 1.

12.3.4 Content. Hydrometeorological data products will be formatted in SHEF and:

   a.   Contain a WMO header;

   b.   Contain an MND header block as shown in the generic format below, with the product name matching one of the MND product type lines listed in Table 1 (if produced at a WFO); and

   c.   Include a headline statement introducing the product (if produced at a WFO).

WMO Heading	MND Product Type Line	Content
SRA_1A_2ii cccc ddhhmm (BBB) RR1xxx	HYDROMETEOROLOGICAL DATA REPORT #1	Local hydromet data, including observations from partner systems
SRA_1A_2ii cccc ddhhmm (BBB) RR2xxx	HYDROMETEOROLOGICAL DATA REPORT #2	Precipitation data
SRA_1A_2ii cccc ddhhmm (BBB) RR3xxx	HYDROMETEOROLOGICAL DATA REPORT #3	Data from cooperative observers
SRA_1A_2ii cccc ddhhmm (BBB) RR4xxx	HYDROMETEOROLOGICAL DATA REPORT #4	Cooperative observer special reports
SRA_1A_2ii cccc ddhhmm (BBB) RR5xxx	HYDROMETEOROLOGICAL DATA REPORT #5	Hourly hydrometeorological data (e.g., from flood warning system)
SRA_1A_2ii cccc ddhhmm (BBB) RR6xxx	HYDROMETEOROLOGICAL DATA REPORT #6	ASOS precip report, produced on exceedence of threshold rates
SRA_1A_2ii cccc ddhhmm (BBB) RR7xxx	HYDROMETEOROLOGICAL DATA REPORT #7	ASOS hourly precipitation report
SRA_1A_2ii cccc ddhhmm (BBB) RR8xxx	HYDROMETEOROLOGICAL DATA REPORT #8	Data provided by water resources agencies
SRA_1A_2ii cccc ddhhmm (BBB) RR9xxx	HYDROMETEOROLOGICAL DATA REPORT #9	Local hydrometeorological data
SRA_1A_2ii cccc ddhhmm (BBB) RRMxxx	MISCELLANEOUS HYDROLOGIC DATA REPORT	Local hydrometeorological data, SHEF or tabular format
SRA_1A_2ii cccc ddhhmm (BBB) RRAxxx	AUTOMATED DATA REPORT	Automated river and rain gage data

Table 1. Header instructions for hydrometeorological data products.

12.3.5 <u>Format</u>. The generic format is shown in Figure 14 below:

```
SRA₁A₂ii cccc ddhhmm (BBB)
RRxxxx
stC001-005>015-ddhhmm- ¹

<MND Product Type Line> ¹
NATIONAL WEATHER SERVICE <WFO location> ¹
hhmm am/pm time_zone mon dd yyyy ¹

<...Headline statement...> ¹

<Data summary, SHEF or tabular format>

$$ ¹

_____
```
Note (1): these items are only required if the product is produced by a WFO. They are optional if product is generated by other sources outside a WFO.

Figure 14. Generic format for Hydrometeorological Data Products (RRx).

12.4 <u>Updates, Amendments, and Corrections</u>. Provide updates by issuing a new product. Amendments are not applicable to this product. Follow standard NWS practices for corrections.

13.   **Hydrometeorological Data Summary Products (HYx).**   These products provide daily, weekly, and monthly summaries of hydrometeorological observations.

13.1   Mission Connection.   These products help the NWS meet its mission by providing quality-controlled observations to a national information database which can be used by other government agencies, the private sector, and the public to enhance the national economy.

13.2   Issuance Guidelines.

13.2.1 Creation Software. Create hydrometeorological data summary products using the WHFS or other applications as appropriate.

13.2.2 Issuance Criteria. Issue this product when daily, weekly, or monthly data has been compiled and reviewed.

13.2.3 Issuance Time. Issue daily, weekly, or monthly hydrometeorological summary products according to schedules developed with local customers and partners.

13.2.4 Valid Time. Not applicable - this product is a report of observed data.

13.3   Technical Description.

13.3.1 UGC Type. County codes should be used (Zone for Alaska).

13.3.2 MND Broadcast Instruction Line. Not applicable.

13.3.3 MND Product Type Line.   Use the MND product type lines shown in table 2.

13.3.4 Content. Hydrometeorological data summary products will include a:

    a.   WMO header;

    b.   MND header block as shown in the generic format below, with the product name matching one of the MND product type lines listed in Table 2; and

    c.   (optional) Headline statement introducing the product.

WMO Header	MND Product Type Line	Content
SXA$_1$A$_2$ii cccc ddhhmm (BBB) HYDxxx	DAILY HYDROMETEOROLOGICAL DATA SUMMARY	Quality controlled daily [1] hydrometeorological data
CWA$_1$A$_2$ii cccc ddhhmm (BBB) HYWxxx	WEEKLY HYDROMETEOROLOGICAL DATA SUMMARY	Quality controlled weekly hydrometeorological data
CSA$_1$A$_2$ii cccc ddhhmm (BBB) HYMxxx	MONTHLY HYDROMETEOROLOGICAL DATA SUMMARY	Quality controlled monthly hydrometeorological data
Note (1): product not limited to strictly daily issuance - e.g., may be issued every other day.		

Table 2. Header instructions for hydrometeorological data summary products.

13.3.5 <u>Format</u>. The generic format for hydrologic data products is shown in Figure 15 below. Note: use the WMO headings shown in Table 2, i.e., TT=SX for daily products; TT=CW for weekly products; and TT=CS for monthly products.

```
TTA₁A₂ii cccc ddhhmm (BBB)
HYXxxx
stC001-005>015-ddhhmm-

<MND Product Type Line>
NATIONAL WEATHER SERVICE <WFO location>
hhmm am/pm time_zone mon dd yyyy

<(optional)...Headline statement...>

<Data summary, SHEF or tabular format>

$$
```

Figure 15. Generic format for Hydrometeorological Data Summary Products (HYx).

13.4 <u>Updates, Amendments, and Corrections</u>. Provide updates by issuing a new product. Amendments are not applicable to this product. Follow standard NWS practices for corrections.

14. Hydrometeorological Coordination Message (HCM). Hydrometeorological coordination messages are produced by WFOs to communicate any type of internal forecast/support-oriented information to supporting RFCs, other WFOs, and the National Centers for Environmental Prediction (NCEP). This product is not distributed over NWS-supported public dissemination pathways or posted on the Internet, but may be made available through secured mechanisms to selected partners.

14.1 <u>Mission Connection</u>. The hydrometeorological coordination message helps the NWS meet its mission by providing RFC, WFO, and NCEP forecasters with a mechanism for communicating sensitive information on potential hydrometeorological activity before it is released to the public in the form of forecasts and warnings.

14.2 <u>Issuance Guidelines</u>.

14.2.1 <u>Creation Software</u>. Use appropriate text editor on AWIPS.

14.2.2 <u>Issuance Time</u>. The HCM is a non-scheduled, event-driven product.

14.3   <u>Technical Description</u>.

14.3.1 <u>MND Product Type Line</u>. Use: "HYDROMETEOROLOGICAL COORDINATION MESSAGE."

14.3.2 <u>Content</u>. Topics discussed in this product may include (but are not limited to): contingency planning for future hydrometeorological events, QPF verification information, hydrologic forecast verification information, and problems with gage or radar-based data.

14.3.3 <u>Format</u>. The generic format is shown in Figure 16 below:

```
AGA₁A₂ii Kccc ddhhmm (BBB)
HCMxxx

HYDROMETEOROLOGICAL COORDINATION MESSAGE
NWS <WFO name> <WFO location>
Time am/pm time_zone day mon dd yyyy

<Headline introducing the information to be presented below>

<Discussion>

$$
```

Figure 16. Generic format for Hydrometeorological Coordination Message (HCM).

14.4   <u>Updates, Amendments, and Corrections</u>. Not applicable.

15.   Advanced Hydrologic Prediction Service. The hydrologic forecast information and observed data contained in products described in the previous sections, as well as additional output from WFO hydrometeorological systems, can be incorporated into graphical products and a forecast information database and made available through mechanisms such as the Internet. These WFO Advanced Hydrologic Prediction Service (AHPS) products and information sets provided through the Internet will conform to current NWS, NOAA, and DOC policies.